

MANUAL PART NUMBER: 400-0199-006

## DA1931CT

# TWISTED PAIR TO VIDEO + AUDIO RECEIVER USER'S GUIDE

**ALTINEX®**

SIGNAL  
MANAGEMENT  
SOLUTIONS®

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## PRECAUTIONS / SAFETY WARNINGS 1

Please read this manual carefully before using your **DA1931CT**. Keep this manual handy for future reference. These safety instructions are to ensure the long life of your **DA1931CT** and to prevent fire and shock hazards. Please read them carefully and heed all warnings.

### 1.1 GENERAL

- Qualified ALTINEX service personnel or their authorized representatives must perform all service.

### 1.2 INSTALLATION

- To prevent fire or shock, do not expose this unit to water or moisture. Do not place the **DA1931CT** in direct sunlight, near heaters or heat-radiating appliances, or near any liquid. Exposure to direct sunlight, smoke, or steam can harm internal components.
- Handle the **DA1931CT** carefully. Dropping or jarring can damage the unit.
- Do not pull any cables that are attached to the **DA1931CT**.

### 1.3 CLEANING

- Clean only with a dry cloth. Never use strong detergents or solvents such as alcohol or thinner. Do not use a wet cloth or water to clean the unit. Do not open the unit to clean.

### 1.4 FCC NOTICE

- This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions found herein, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
- Any changes or modifications to the unit not expressly approved by ALTINEX, Inc. could void the user's authority to operate the equipment.

## ABOUT YOUR DA1931CT

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### DA1931CT

#### Twisted Pair to Video + Audio Receiver

The **DA1931CT** provides a means of receiving computer video and audio signals over Twisted Pair-type (CAT-5) cable when used together with an ALTINEX Twisted Pair Video Transmitter, such as the **DA1930CT**.

The **DA1931CT** is compact and easy to use. The **DA1931CT** is able to receive one of the video sources such as RGBHV, component video, S-Video, or composite video, along with stereo audio transmitted over the Twisted Pair cable from the **DA1930CT** or equivalent transmitter.

The **DA1931CT** provides both audio and video outputs. The **DA1931CT** offers a female 15-pin HD output for RGBHV/YPbPr signals, a 4-pin Mini DIN connector for S-Video and an RCA connector for composite video output. A 5-pin terminal block is available for balanced stereo output and a 3.5 mm jack is used for unbalanced stereo output.

The unit also offers hardware video equalization for long cable lengths. The video equalization works in conjunction with the equalization on the transmitter for optimal performance. There is also a Signal Detect feature which shows when an input signal is present.

The latest generation of Twisted Pair devices uses an innovative, patented technology\* developed by ALTINEX. The new signal processing technology allows transmitting and receiving fully equalized computer video signals, stereo, and audio signals over long distances.

\* US Patent 7,065,190

## TECHNICAL SPECIFICATIONS

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Specifications are subject to change.

See [www.altinex.com](http://www.altinex.com) for up-to-date information.

FEATURES/ DESCRIPTION	DA1931CT
<b>GENERAL</b>	
<b>Inputs Video/Audio</b>	
Twisted Pair	RJ-45 female (1)
<b>Outputs</b>	
RGBHV/YPbPr	15-pin HD (1)
S-Video	4-pin Mini DIN (1)
Composite Video	RCA female (1)
Stereo Audio – unbal.	3.5 mm jack (1)
Stereo Audio – balanced	5-pin terminal block (1)
<b>Compatibility</b>	
Signal Types	ALTINEX Standard for Twisted Pair
Video Signal Resolutions	VGA through UXGA 480p through 1080i
Recommended Max. Cable Lengths <i>Note: Measurements made using ALTINEX low-skew cable, CB3150PV.</i>	VGA: 640x480@60Hz 900 ft (274 m) XGA: 1024x768@60Hz 700 ft (213 m) SXGA: 1280x1024@60Hz 650 ft (198 m) UXGA: 1600x1200@60Hz 600 ft (183 m)
<b>Accessories Included</b>	
Power Adapter	+9 VDC, 1.1 A

Table 1. **DA1931CT** General

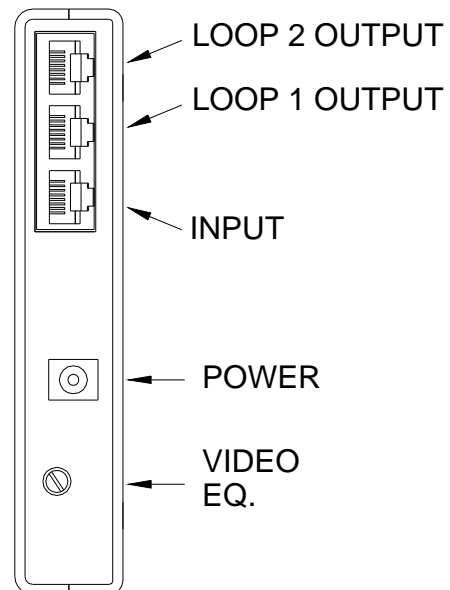
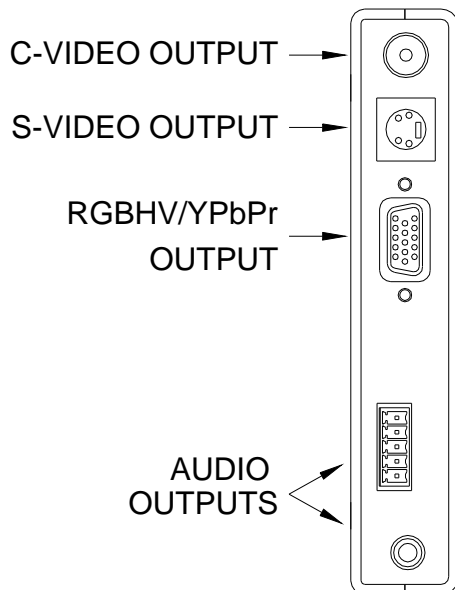
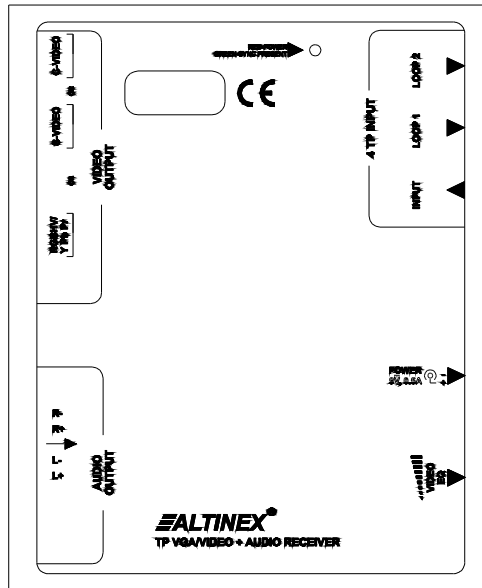
# SPECIAL APPLICATION

MECHANICAL	DA1931CT
Material	0.1" Al
Finish	ALTINEX Grey
Top Panel	Lexan Overlay
Height	5.28 in (134 mm)
Width	4.29 in (109 mm)
Depth	0.98 in (25 mm)
Weight	1.0 lb (0.45 kg)
Ship Weight	1.6 lb (0.73 kg)
T° Operating	10°C-40°C
T° Maximum	50°C
Humidity	90% non-condensing
MTBF (calculations)	40,000 hrs

Table 2. **DA1931CT** Mechanical

ELECTRICAL	DA1931CT
<b>Input</b>	
Twisted Pair	Video/Sync/Audio Signals ALTINEX Standard
<b>Output Video Signals</b>	
RGBHV/YPbPr - Video	75 ohms
RGBHV - Sync	10 kohms/TTL
S-Video	75 ohms
Composite Video	75 ohms
<b>Output Audio Signals</b>	
Gain at 1 KHz- Balanced	+6 dB +/- 10%
Gain at 1 KHz- Unbal.	0 dB +/- 0.5dB
Amplitude Matching (difference Left to Right)	10% maximum
<b>Power Consumption</b>	
External Adapter: 9 VDC	465 mA (4.2 W)

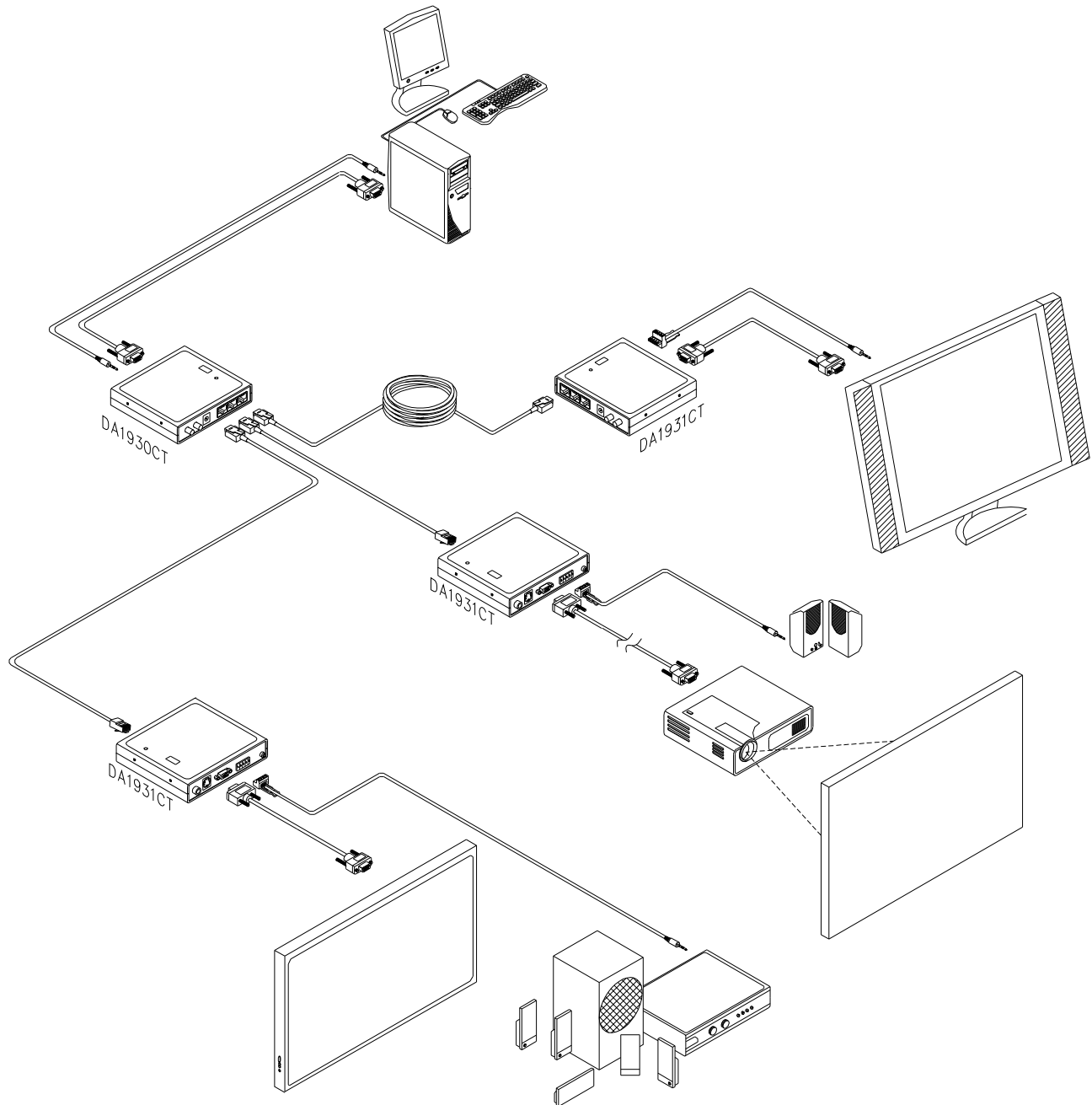
Table 3. **DA1931CT** Electrical



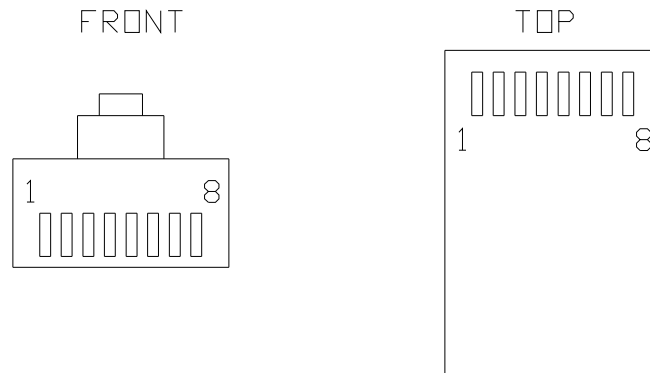
## APPLICATION DIAGRAMS

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### DIAGRAM 1: TYPICAL SETUP



## DIAGRAM 2: RJ-45 PINOUT

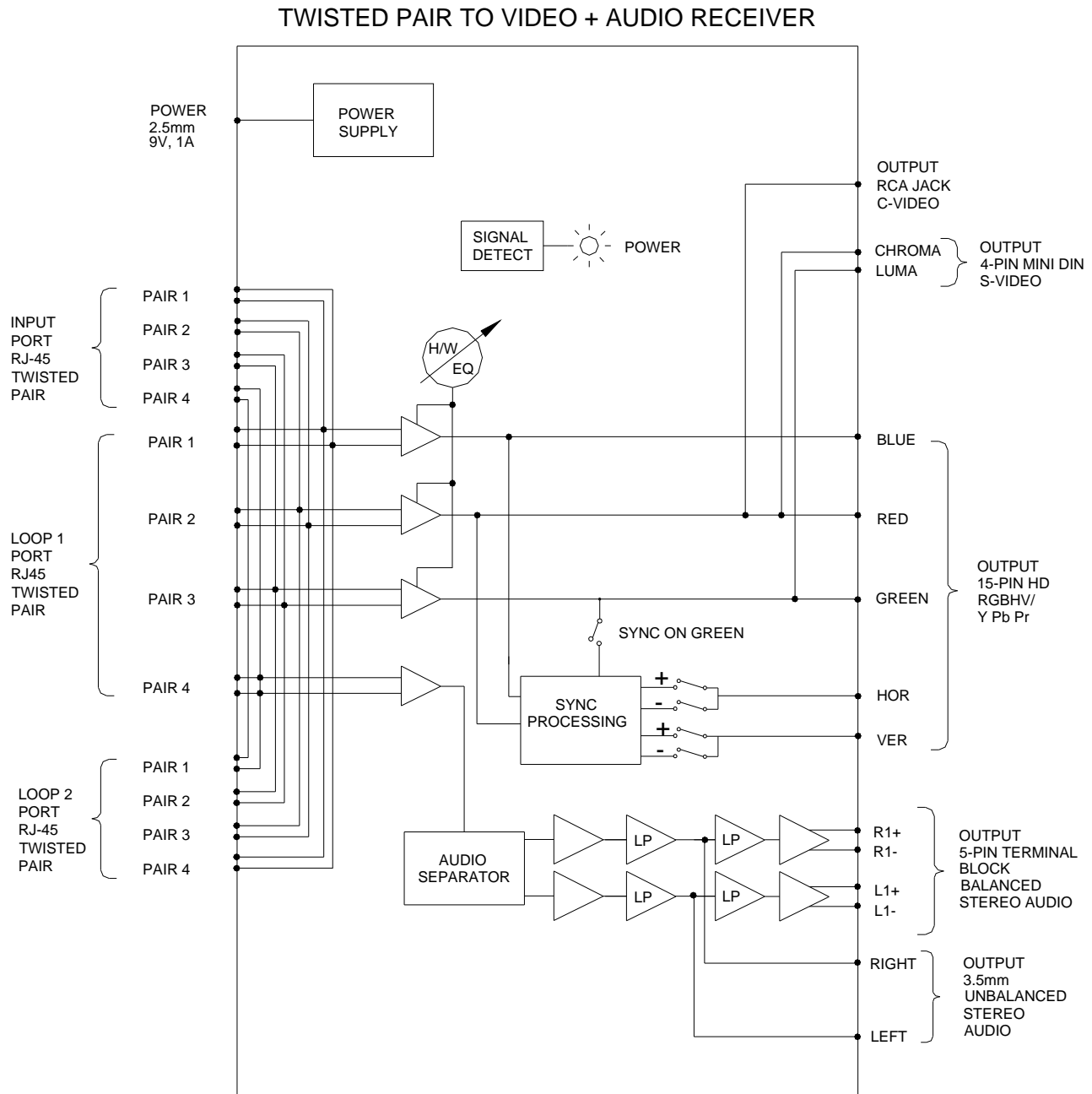


Pin Number	RJ-45 Output Signals
1	Orange/White
2	Orange
3	Green/White
4	Blue
5	Blue/White
6	Green
7	Brown/White
8	Brown

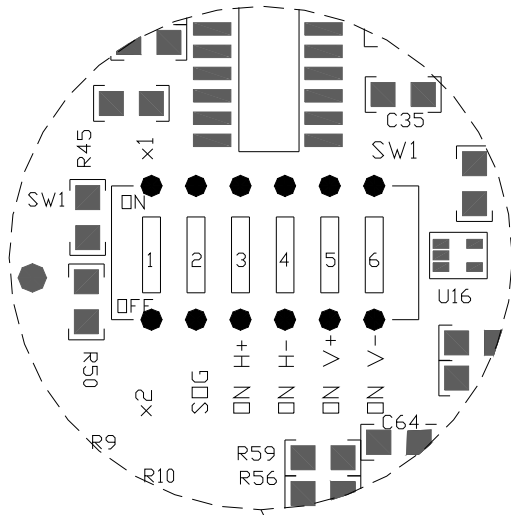
Table 1  
Standard 568B Wiring Color Code



**DIAGRAM 3: INTERNAL VIEW**

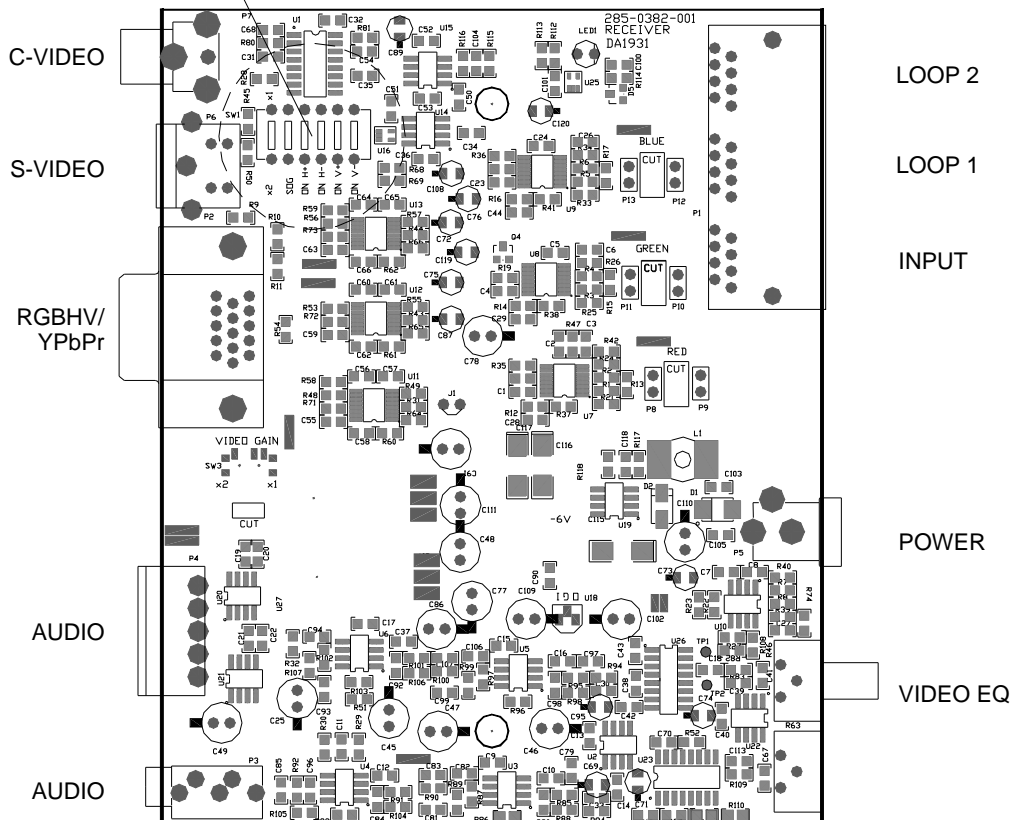


**DIAGRAM 4: DIP-SWITCH SETTINGS**



The DA1931CT has an internal Dip-Switch with 6 positions to achieve the following features:

Position	Description
1	Video Gain ( $G=1/G=2$ ) <b>Factory Default = OFF (<math>G=2</math>).</b>
2	Sync on Green (ON/OFF) <b>Factory Default = OFF</b>
3, 4	HSync Polarity (Positive/Negative) 3 ON, 4 OFF = <b>Positive (Factory Default)</b> 3 OFF, 4 ON = Negative
5, 6	VSyn Polarity (Positive/Negative) 5 OFF, 6 ON = <b>Positive (Factory Default)</b> 5 ON, 6 OFF = Negative



## INSTALLING YOUR DA1931CT

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- Step 1.** Determine the settings required for Gain, Sync-On-Green, Horizontal and Vertical Sync Polarity. If necessary to change the factory defaults, open the unit and set the switches per DIAGRAM 4 on page 9.
- Step 2.** Plug the 9V power adapter into an AC outlet and then connect the other end to the Power input jack on the **DA1931CT**.
- Step 3.** Verify the LED near the top of the unit is illuminated red indicating power is applied.
- Step 4.** Connect the CAT-5/6 cable from the video output of the transmitter to the Input on the **DA1931CT**.
- Step 5.** Verify the power LED at the top of the unit changes to green, indicating a sync signal has been detected.
- Step 6.** Connect the stereo audio output from the **DA1931CT** to the receiving audio device.
- Step 7.** Connect the receiving monitor to the applicable **DA1931CT** video output connector, RGBHV/YPbPr, S-Video, or C-Video depending on the input type to the transmitter.
- Step 8.** Verify the picture quality on the receiving monitor is equivalent to the quality as displayed on the local monitor at the transmitter. If the quality of the image is poor or non-existent, it may be necessary to adjust the video equalization on the **DA1931CT** and/or **DA1930CT**. See the Operation section that follows for details.

**NOTE:** Some monitors may not display an image at all if the equalization is not within its specific range. Use 2 people when setting up the transmitter and receiver, one person at each end of the transmission to view the display while adjustments are made.

## OPERATION

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The **DA1931CT** requires only one adjustment to be made for optimal performance. Video Equalization is required for long cable lengths and may be adjusted to fine-tune the video display.

### 7.1 VIDEO EQUALIZATION

Video Equalization is provided to fine-tune the displayed image on the remote display. The equalization adjustments on the **DA1931CT** Receiver and **DA1930CT** Transmitter work together in providing equalization for maximum cable lengths. For example, for cable runs less than 50 ft (15 m), both equalization settings may be set to approximately minimum, whereas maximum cable will see equalization settings at about the 3/4 position.

## TROUBLESHOOTING GUIDE

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We have carefully tested and have found no problems in the supplied **DA1931CT**. However, we would like to offer suggestions for the following:

### 8.1 LED IS NOT RED

The LED should be on and red when power is applied and there is no video signal present. If the LED is on and green, the unit is receiving power and a sync signal.

**Cause 1: No AC power.**

**Solution:** Verify the adapter is plugged into a working AC outlet and that the outlet has power.

**Cause 2: Adapter is not plugged into DA1931CT.**

**Solution:** Verify the DC power plug coming from the AC adapter is plugged all the way into the **DA1931CT**.

**Cause 3: The DA1931 has a problem.**

**Solution:** If there is AC power to the adapter and the LED still does not turn on, the **DA1931CT** or the power adapter may require service, call ALTINEX at (714) 990-2300.

## 8.2 LED IS NOT GREEN

**Cause 1: There is no power.**

*Solution:* Disconnect the video input from the **DA1931CT** and verify the LED is on and red indicating power is present. Reconnect the computer output. If the LED is not green see Cause 2.

**Cause 2: There is no Sync signal.**

*Solution:* Verify the computer output is operating correctly by connecting it directly to a monitor. If the display is good, please call ALTINEX at (714) 990-2300.

## 8.3 NO SOUND

**Cause 1: The source has a problem.**

*Solution:* Check the source and make sure that there is a signal present and all source connections are correct. If the source is working and there is still no sound, see Cause 2.

**Cause 2: The volume is too low.**

*Solution:* Increase the AUDIO GAIN toward maximum. If there is still no sound present, see Cause 3.

**Cause 3: Cable connections are incorrect.**

*Solution:* Make sure that cables are properly connected. Also, make sure that the continuity and wiring are good. If there is still no sound, see Cause 4.

**Cause 4: The receiving device has a problem.**

*Solution:* Make sure the receiving device has power and is turned on. If there is still no sound, please call ALTINEX at (714) 990-2300.

## 8.4 NO REMOTE IMAGE

**Cause 1: The source has a problem.**

*Solution:* Check the image on the local monitor and verify the quality is good. If it is good, see Cause 2.

**Cause 2: Video equalization required.**

*Solution:* Adjust the Video Equalization on the **DA1931CT**. Long cable runs may require adjustment on both the **DA1930CT** and the **DA1931CT**.

## 8.5 RECEIVING DISPLAY QUALITY IS POOR

**Cause 1: The source has a problem.**

*Solution:* Check the image on the local monitor and verify the quality is good. If it is good, see Cause 2.

**Cause 2: Video equalization required.**

*Solution:* Adjust the Video Equalization on the **DA1931CT**. Long cable runs may require adjustment on both the **DA1930CT** and the **DA1931CT**. If the image is still not correct, call ALTINEX at (714) 990-2300.

## ALTINEX POLICIES

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### 9.1 LIMITED WARRANTY/RETURN POLICIES

Please see the ALTINEX website at [www.altinex.com](http://www.altinex.com) for details on warranty and return policies.

### 9.2 CONTACT INFORMATION

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